

#14

FIG. 1

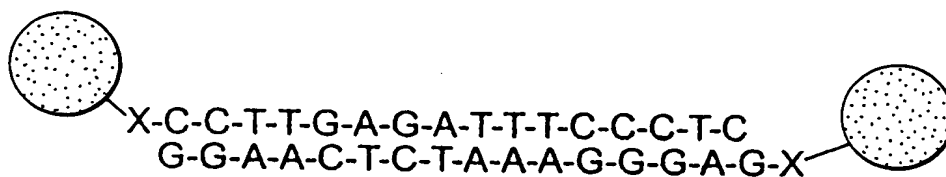
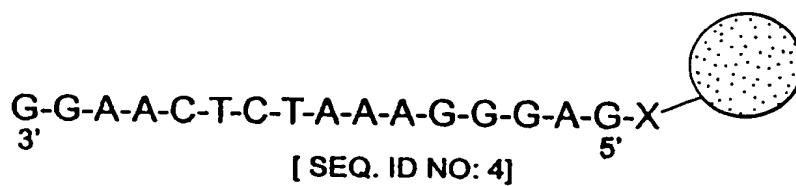
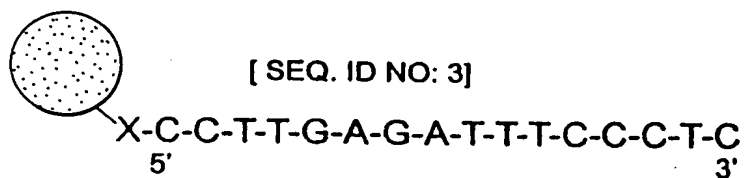


FIG. 2

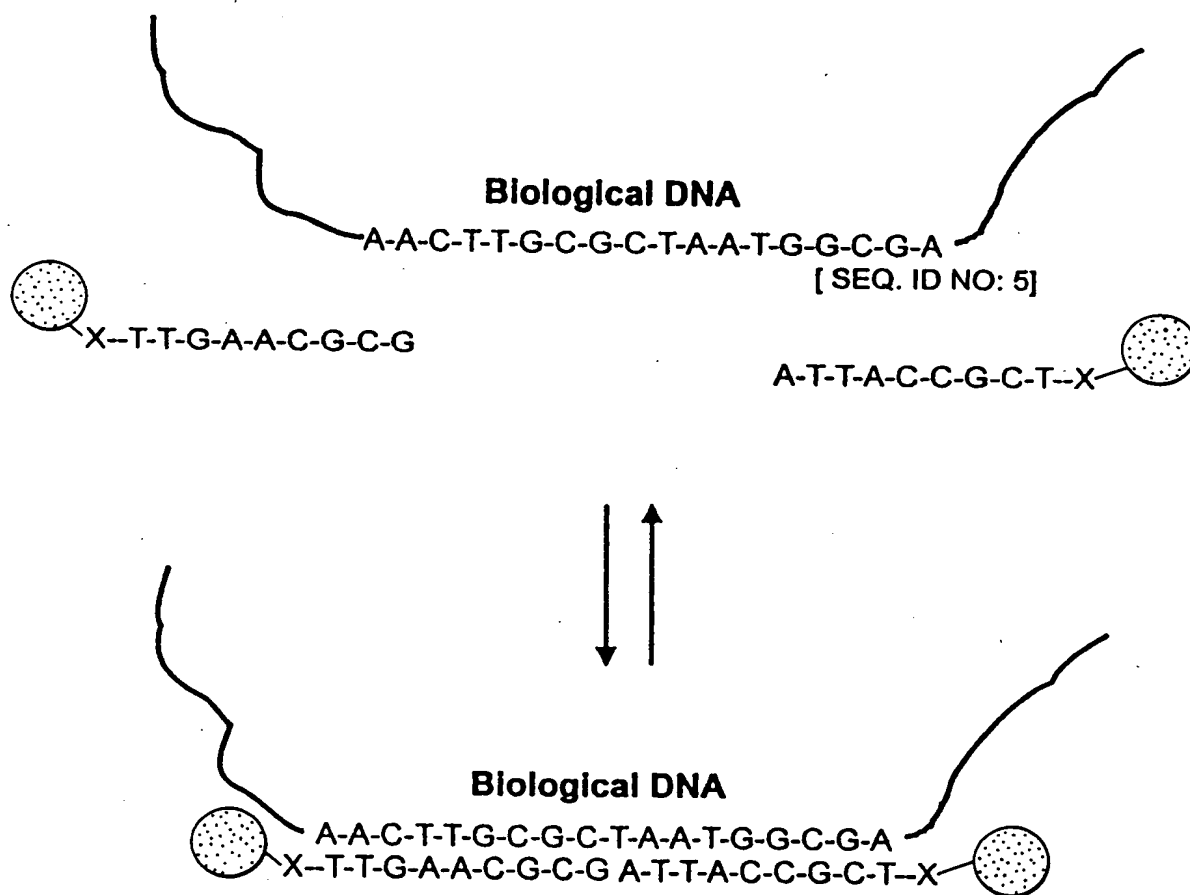


FIG. 3

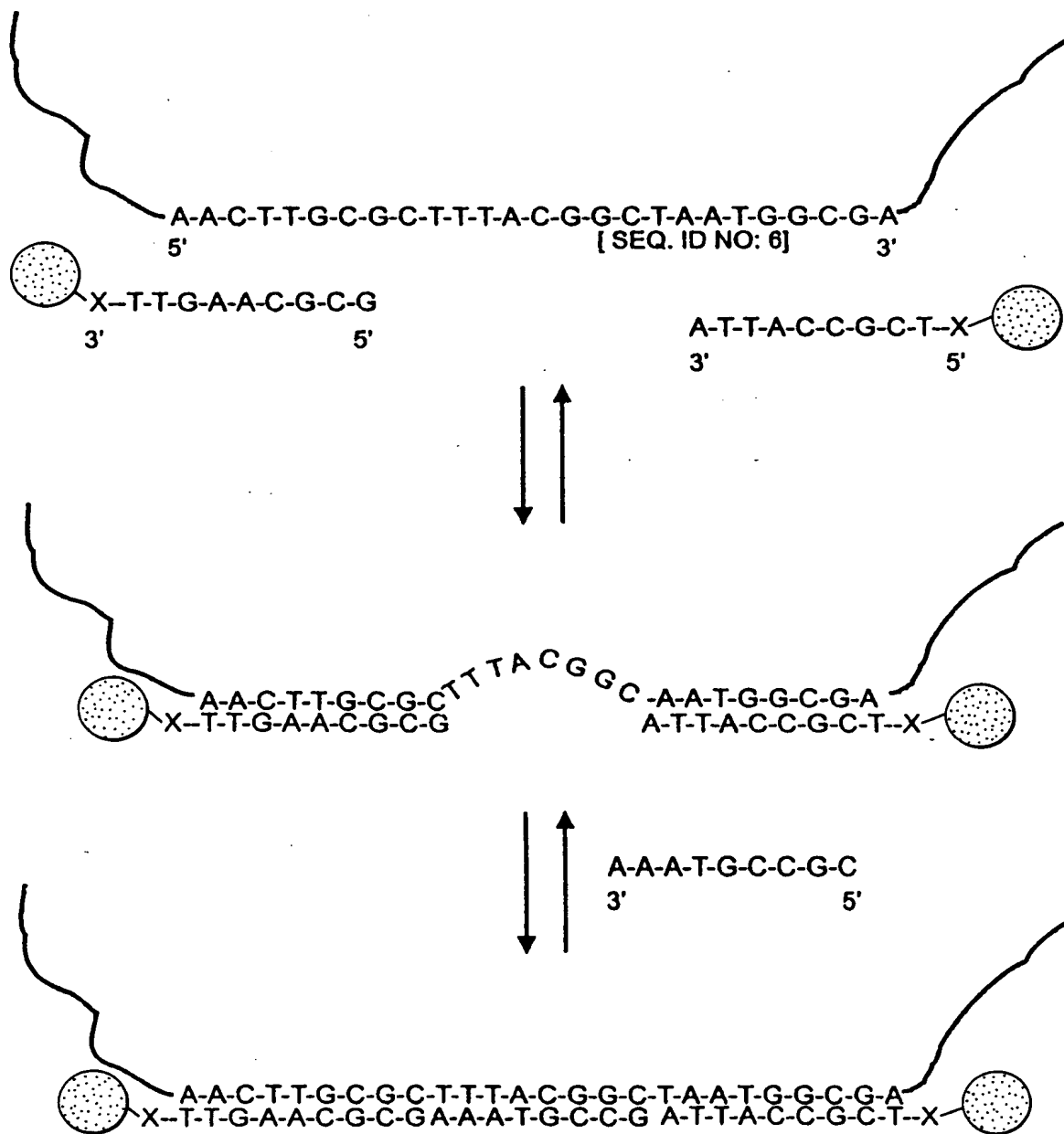
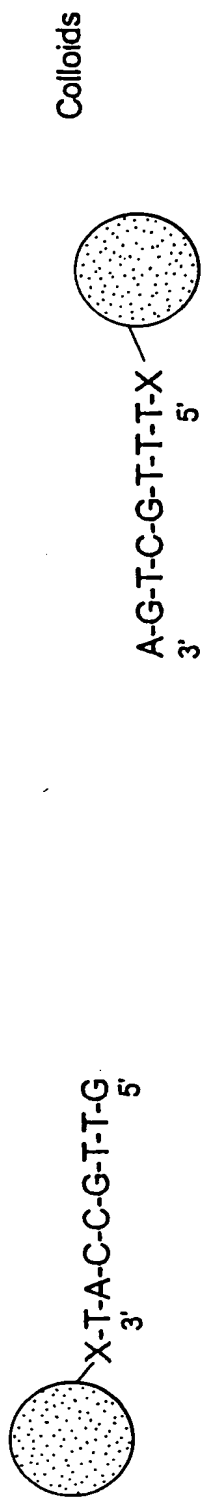
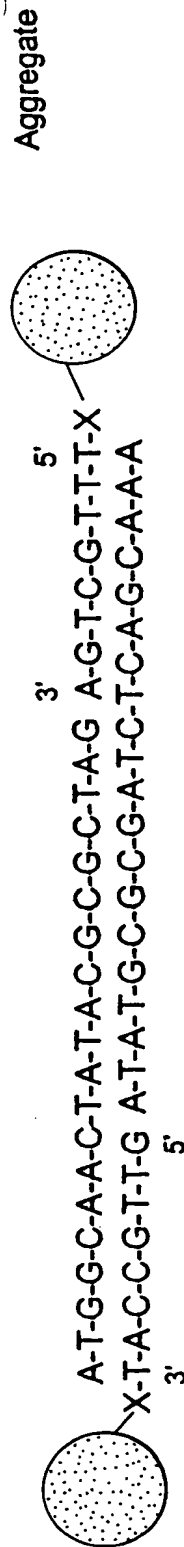


FIG. 4 ^{5'} A-T-G-G-C-A-A-C-T-A-T-A-C-G-C-G-C-T-A-G ^{3'} Linking oligonucleotide
^{3'} A-T-A-T-G-C-G-C-G-A-T-C-T-C-A-G-C-A-A-A ^{5'}
 [SEQ. ID NO: 2] [SEQ. ID NO: 1]



Heat
 ↓
 Mix below T_m
 ↑



Heat
 ↓
 Stand below T_m
 ↑

Precipitate (formed by further cross-linking)

FIG. 5



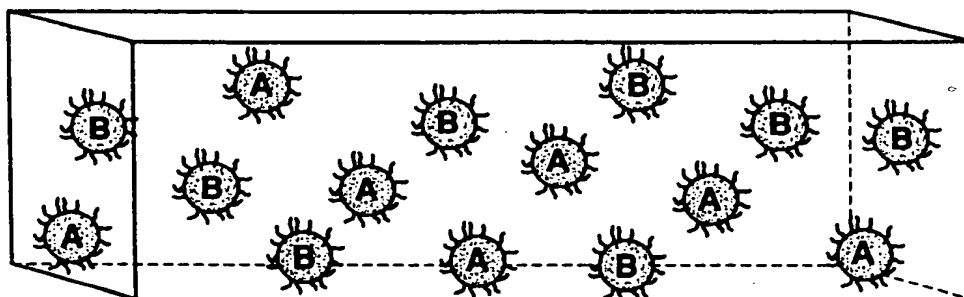
Au nanoparticles



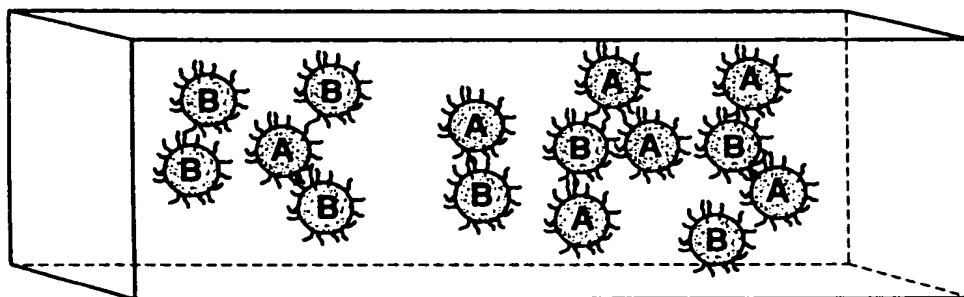
Modification with
3' thiol TACCGTTG 5'



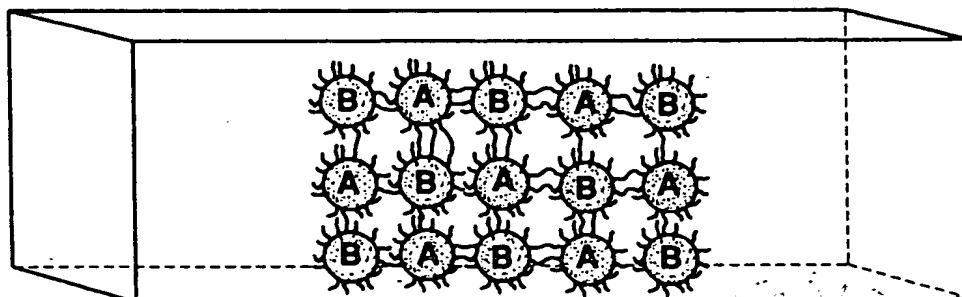
Modification with
5' AGTCGTTT 3' thiol



Addition of linking DNA duplex
5'ATGGCAAC IIII TCAGCAAA 5'



Further oligomerization
and settling



205707222550

FIG.6A FIG.6B FIG.6C

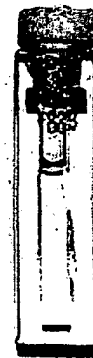


FIG. 7

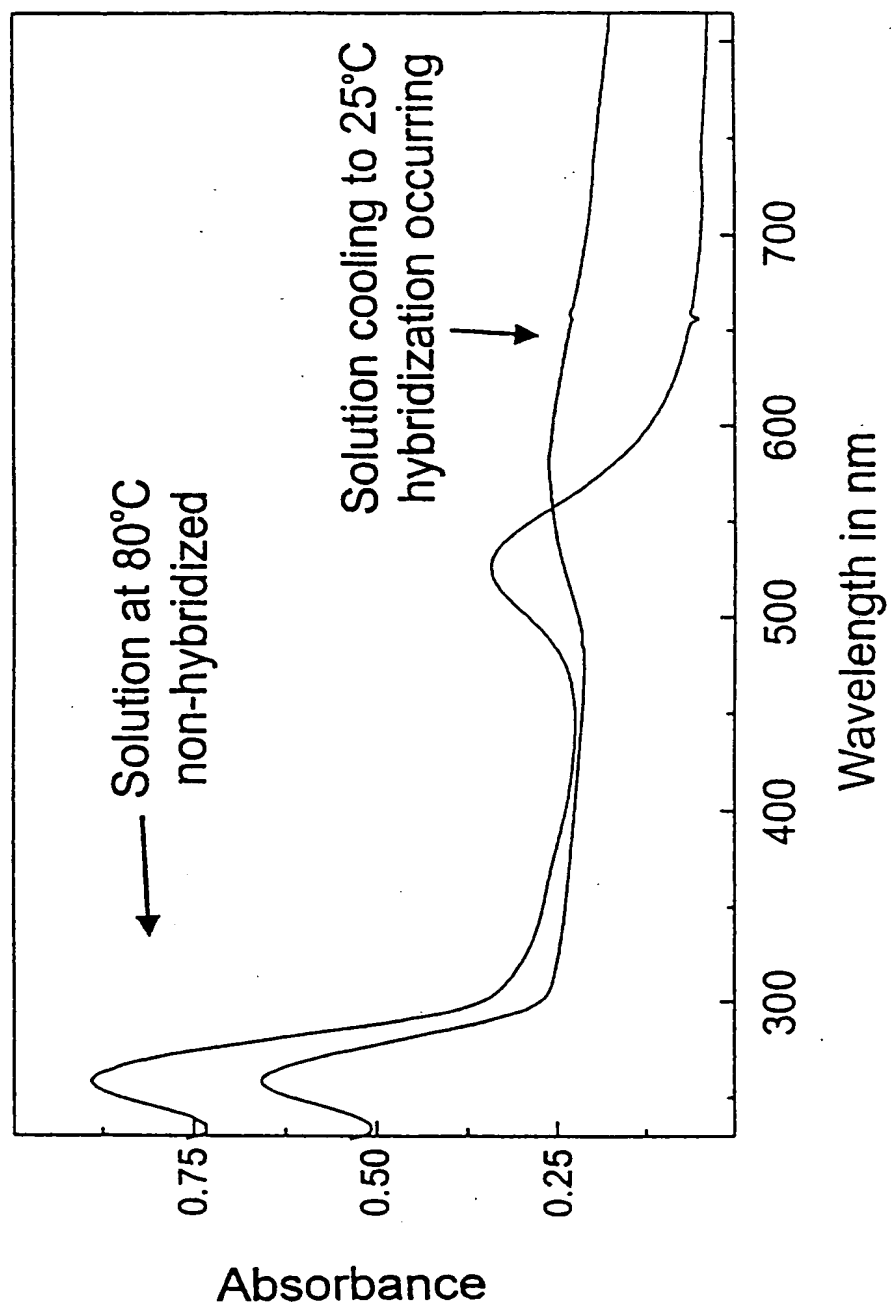


FIG. 8A

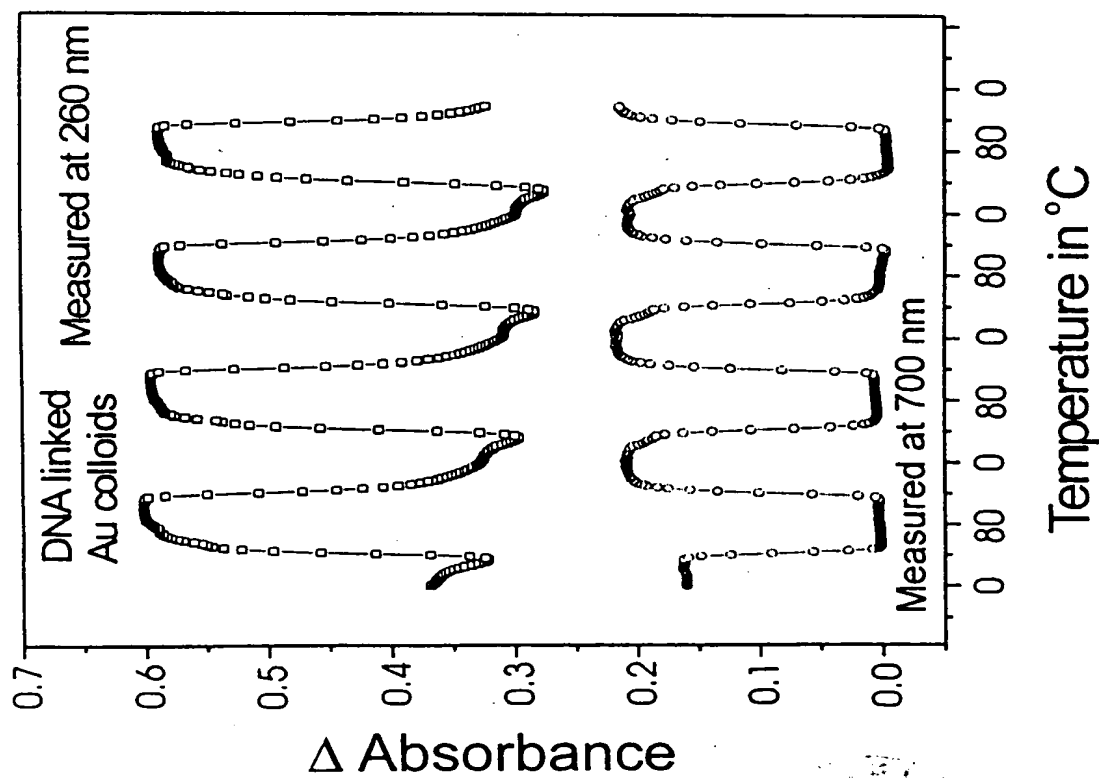


FIG. 8B

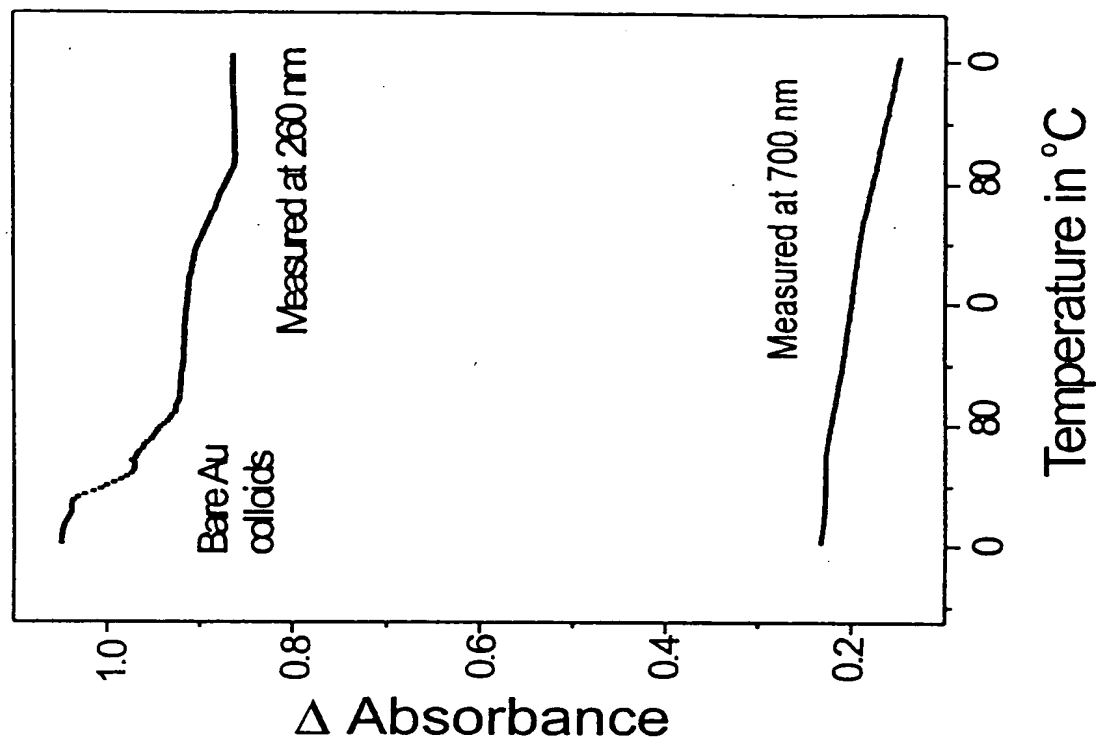


FIG. 9A

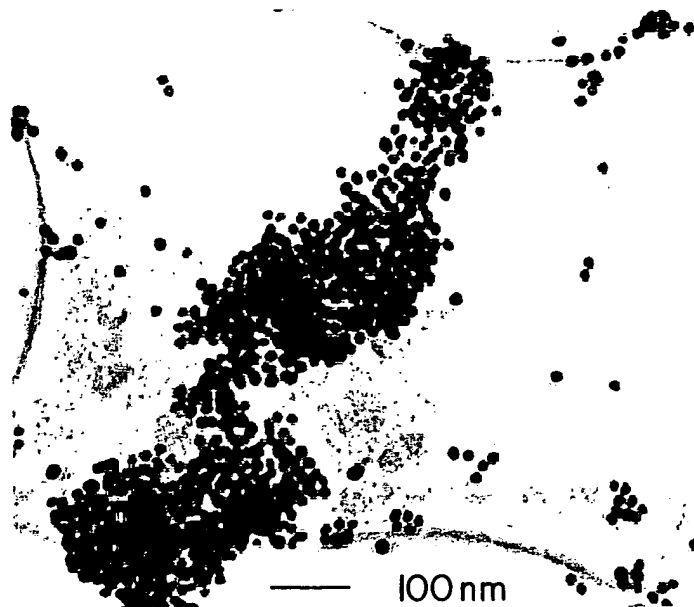


FIG. 9B

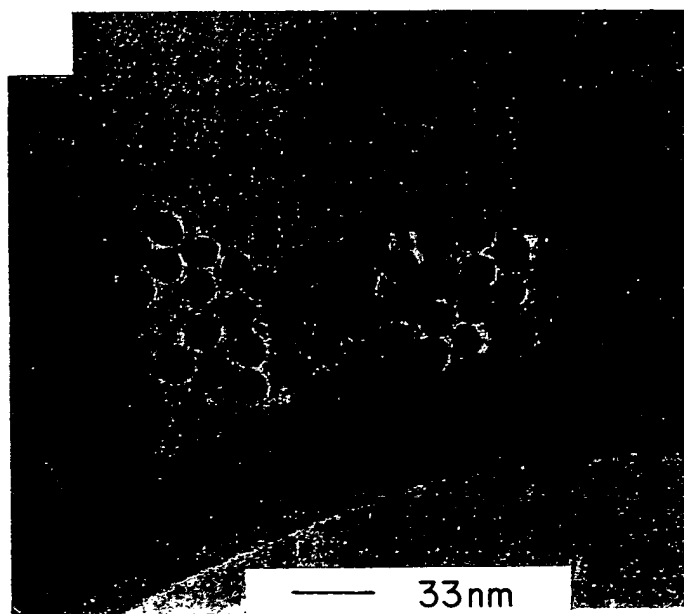


FIG. 10

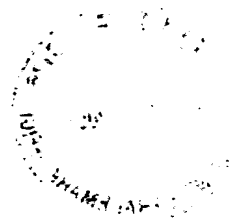
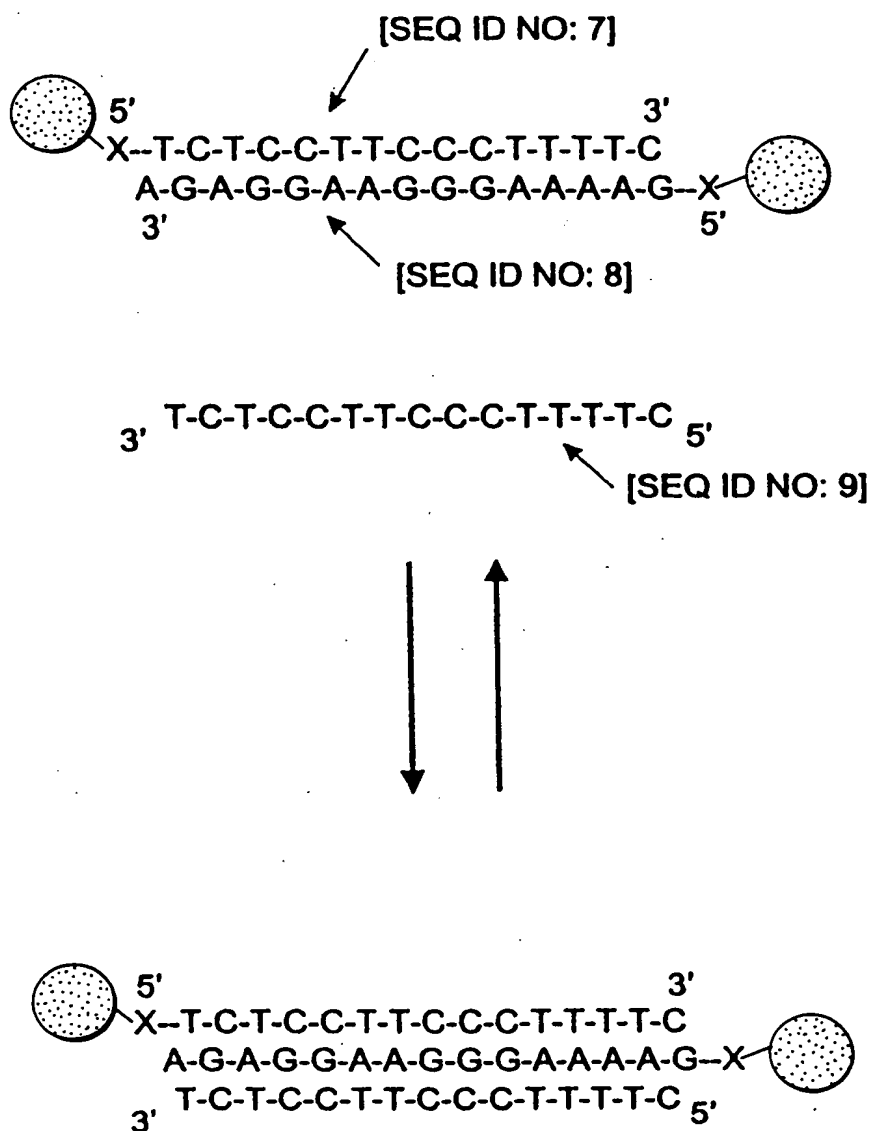


FIG. 11

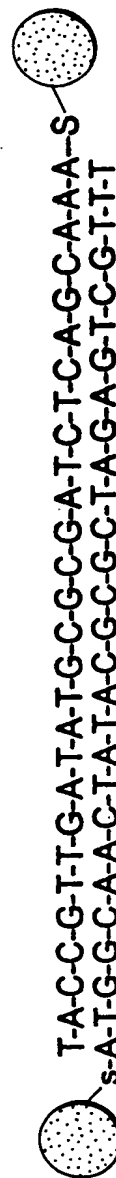
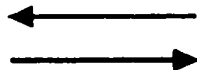
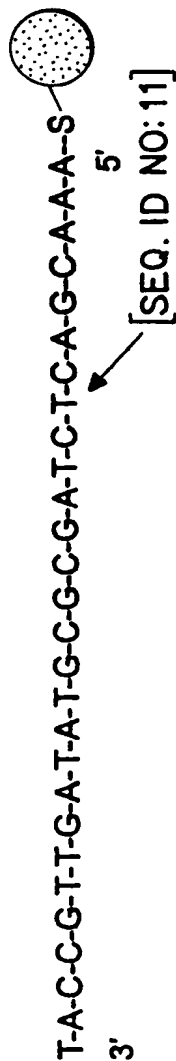
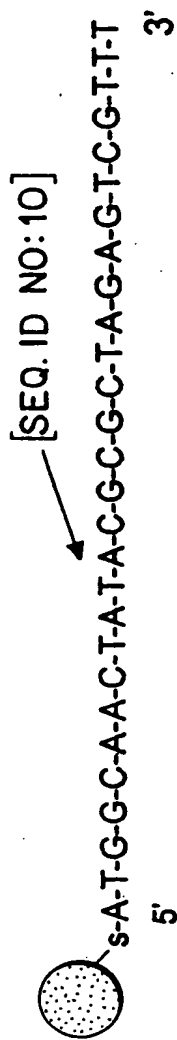


FIG. 12A

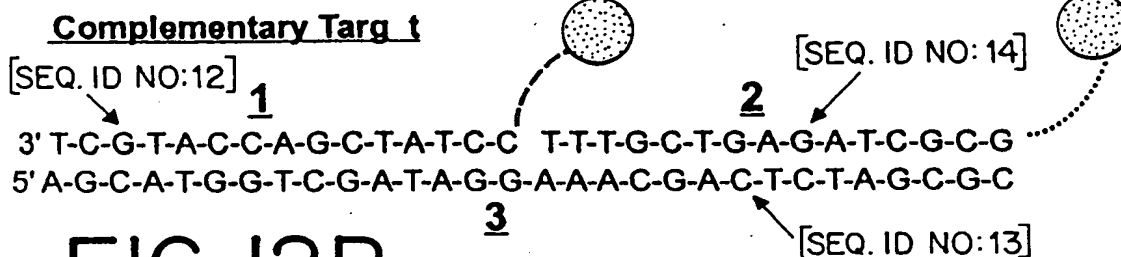


FIG. 12B

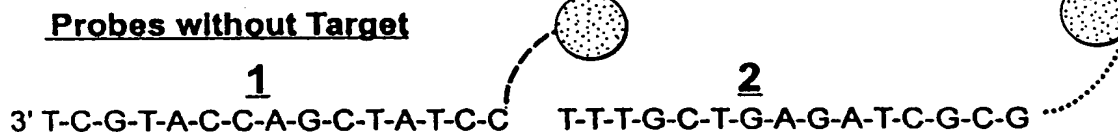


FIG. 12C

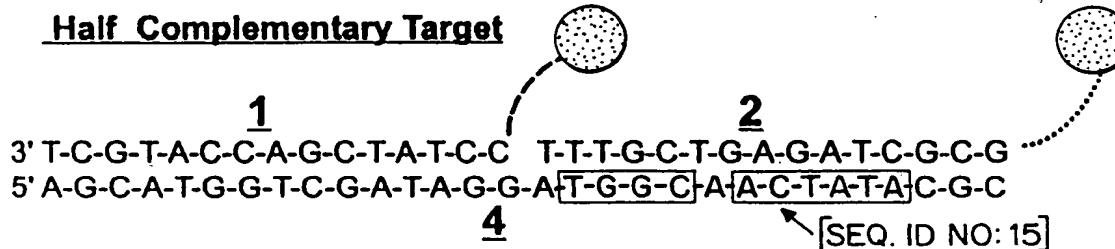


FIG. 12D

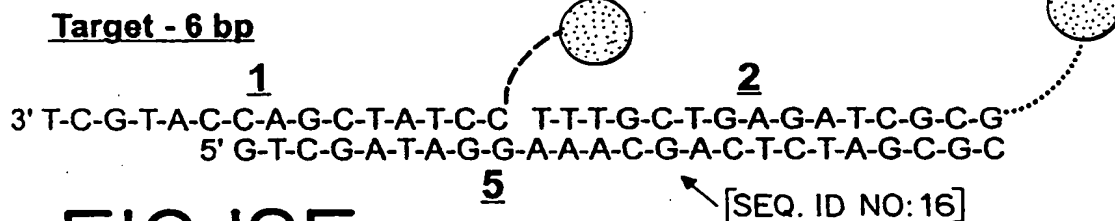


FIG. 12E

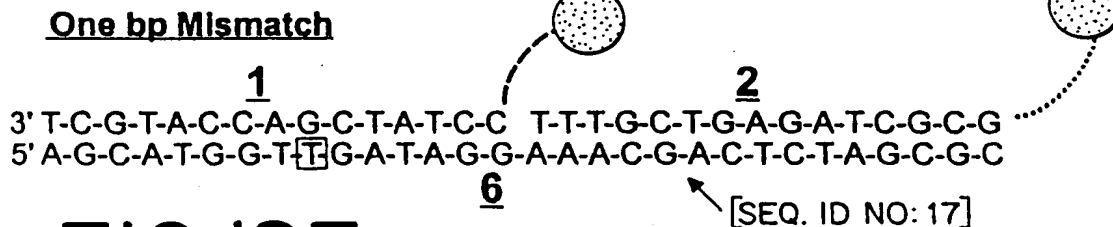


FIG. 12F

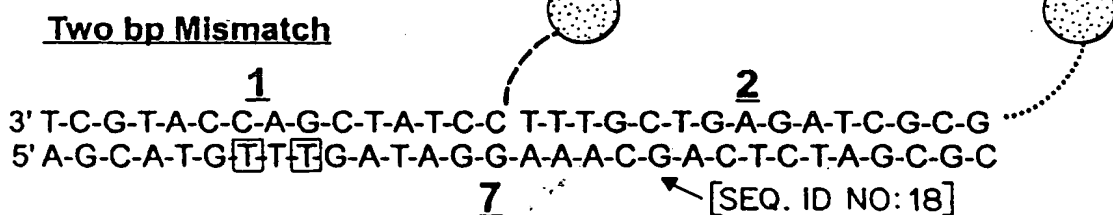


FIG. 13A

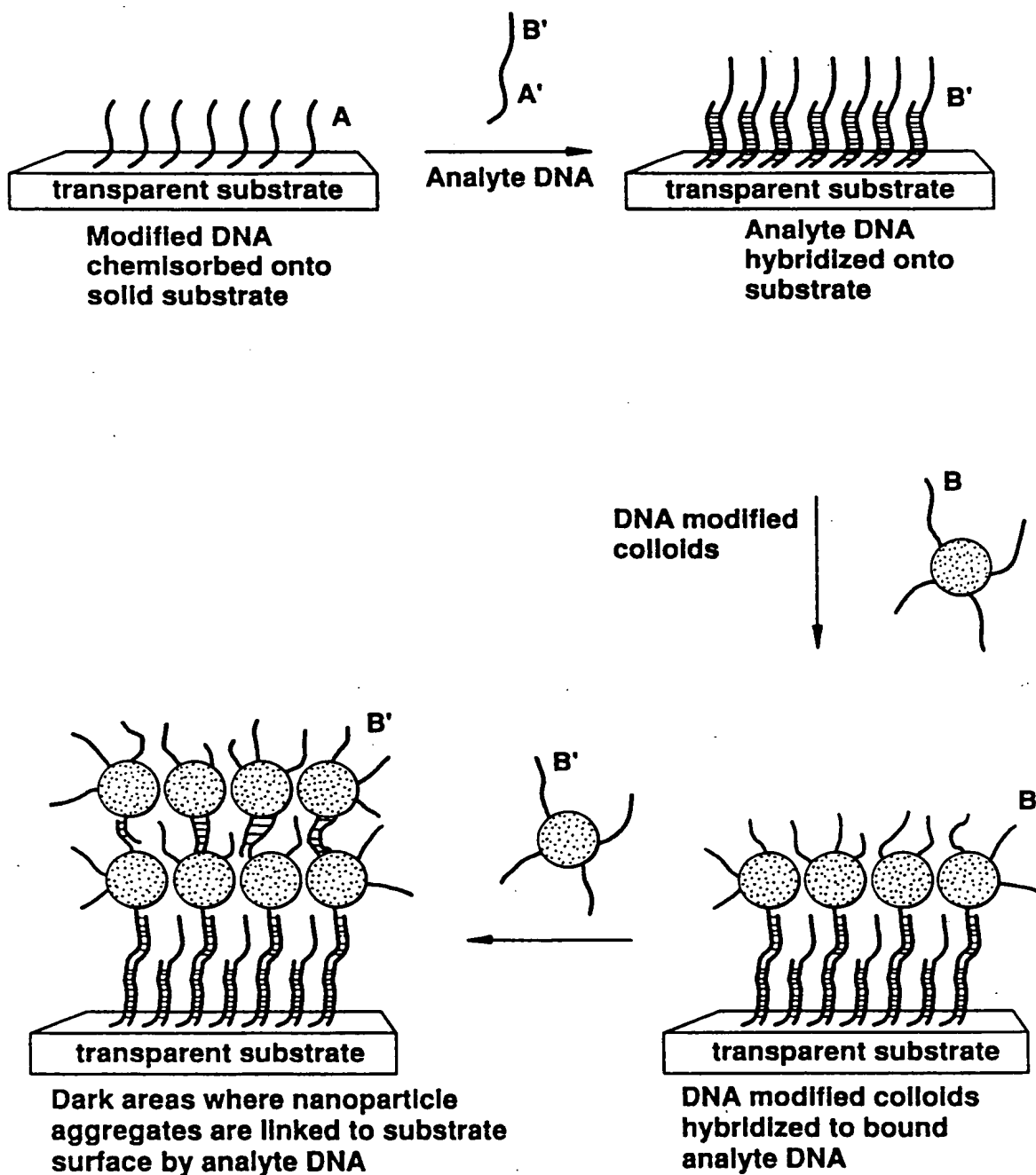


FIG. 13B

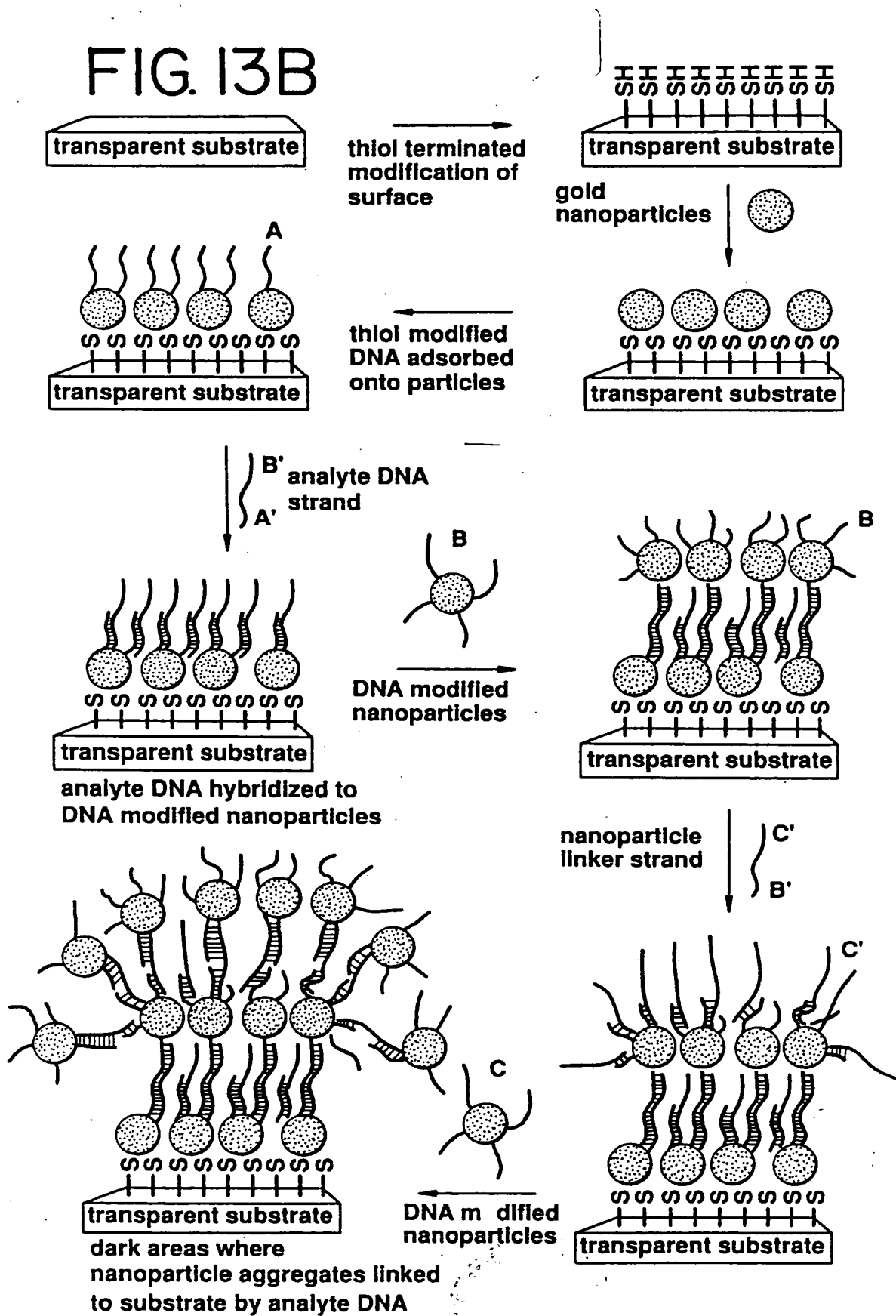


FIG. 14A

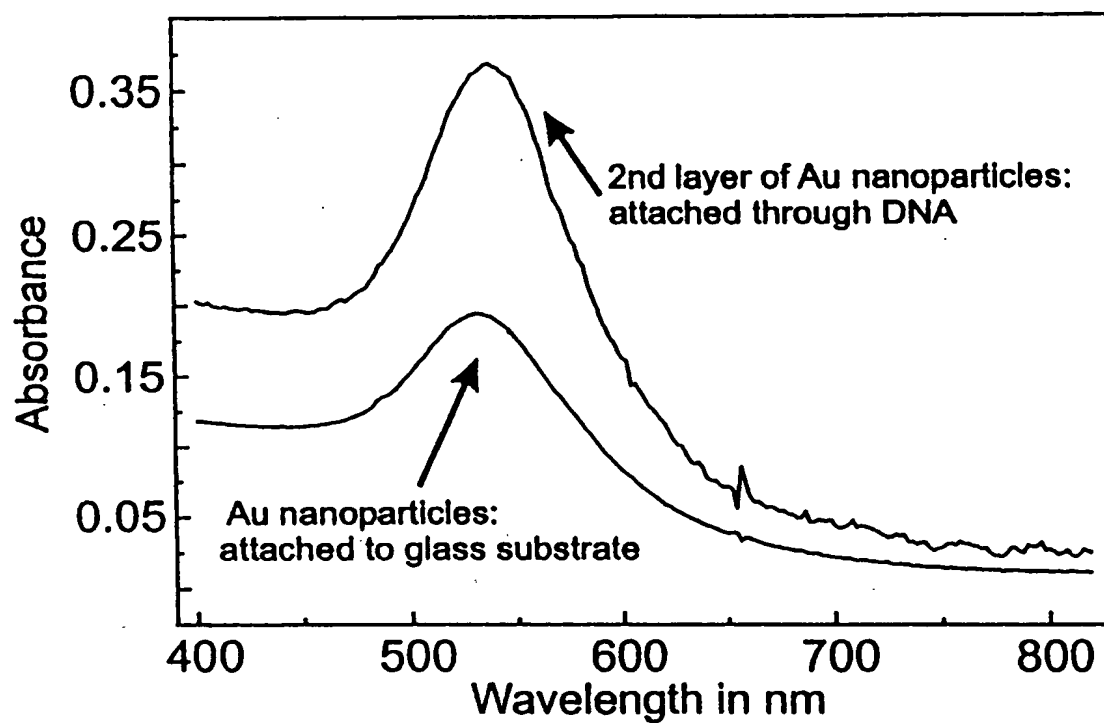


FIG. 14B

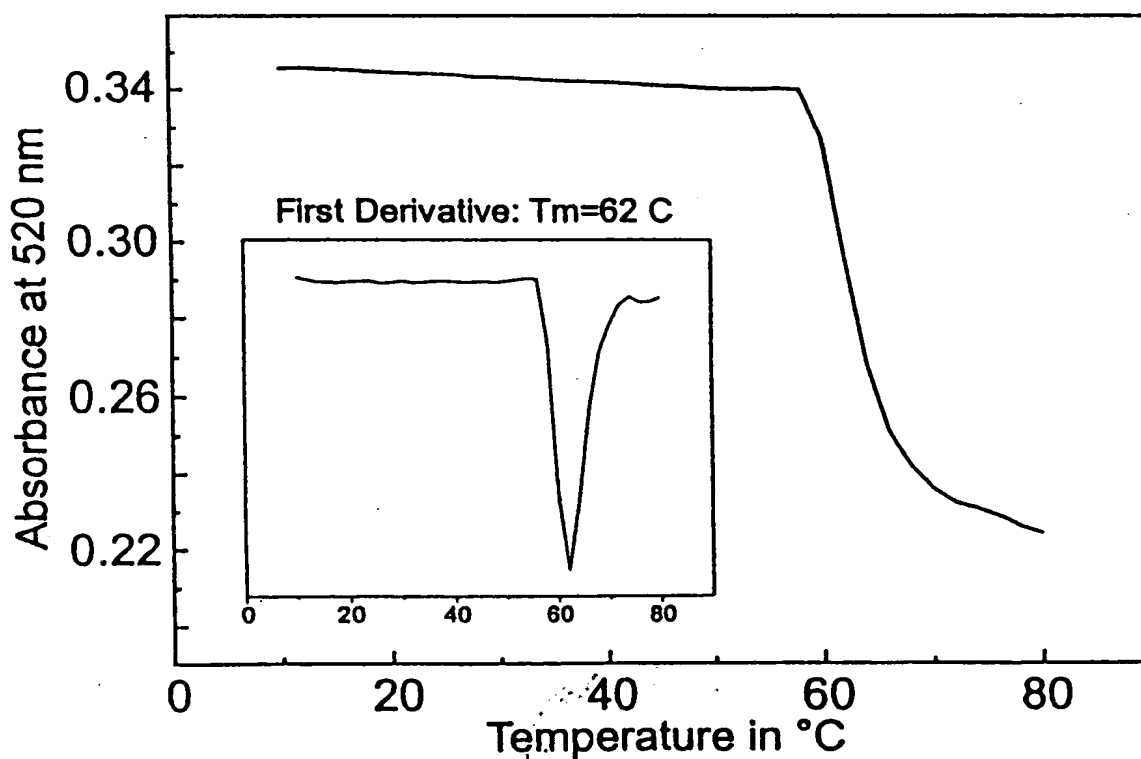


FIG. 15A

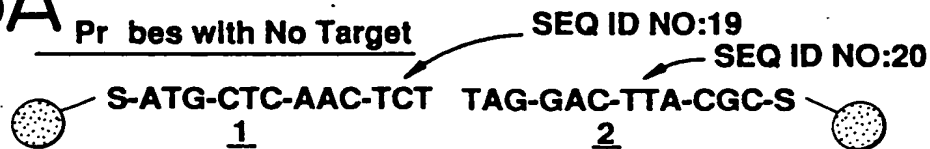


FIG. 15B

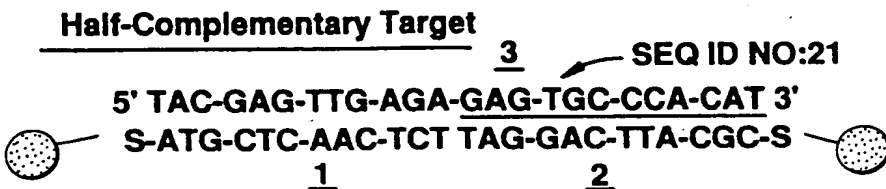


FIG. 15C

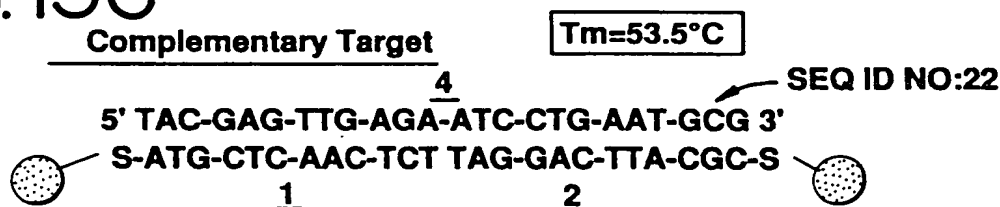


FIG. 15D

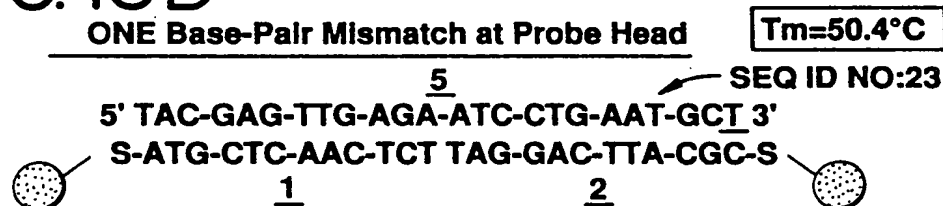


FIG. 15E

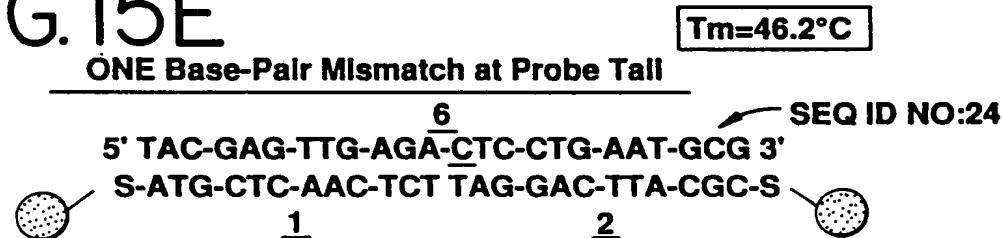


FIG. 15F

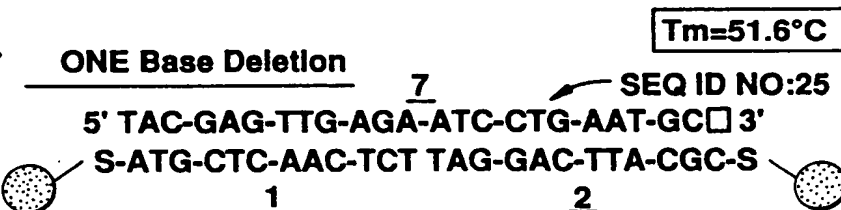
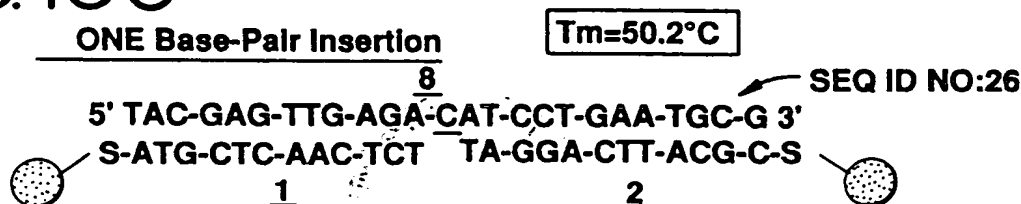


FIG. 15G



24 Base Template

FIG. 16A

5' TAC-GAG-TTG-AGA-ATC-CTG-AAT-GCG 3'
 —S-ATG-CTC-AAC-TCT TAG-GAC-TTA-CGC-S —
 1 2

FIG. 16B

48 Base Template with Complementary 24 Base Filler

5' TAC-GAG-TTG-AGA-CCG-TTA-AGA-CGA-GGC-AAT-CAT-GCA-ATC-CTG-AAT-GCG 3'
 —S-ATG-CTC-AAC-TCT GGC-AAT-TCT-GCT-CCG-TTA-GTA-CGT TAG-GAC-TTA-CGC-S —
 1 2

FIG. 16C

72 Base Template with Complementary 48 Base Filler

5' TAC-GAG-TTG-AGA-CCG-TTA-AGA-CGA-GGC-AAT-CAT-GCA-TAT-ATT-GGA-CGC-TTT-ACG-GAC-AAC-ATC-CTG-AAT-GCG 3'
 —S-ATG-CTC-AAC-TCT GGC-AAT-TCT-GCT-CCG-TTA-GTA-CGT-ATA-TAA-CCT-GCG-AAA-TGC-CTG-TTG TAG-GAC-TTA-CGC-S —
 1 2

FIG. 17A

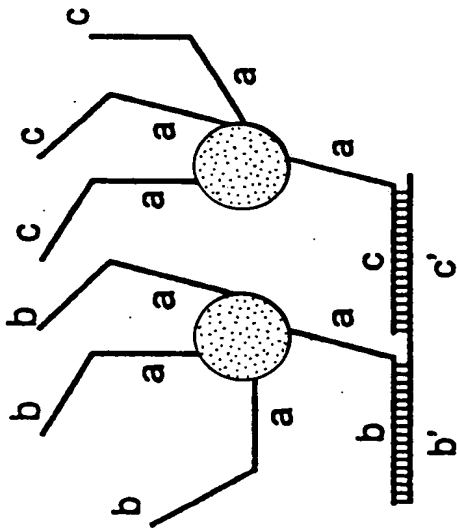


FIG. 17B

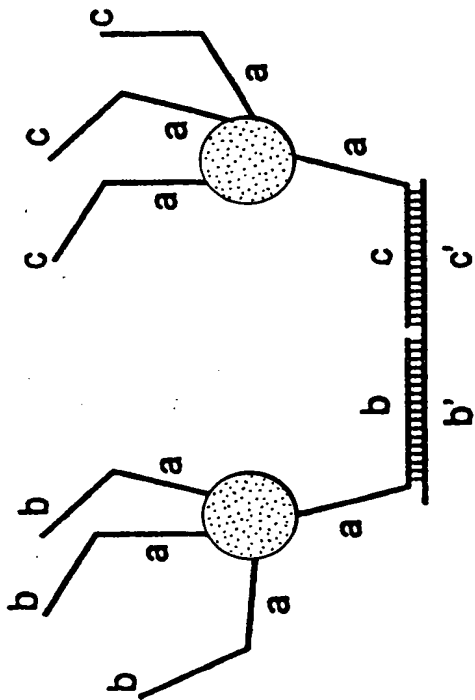


FIG. 17C

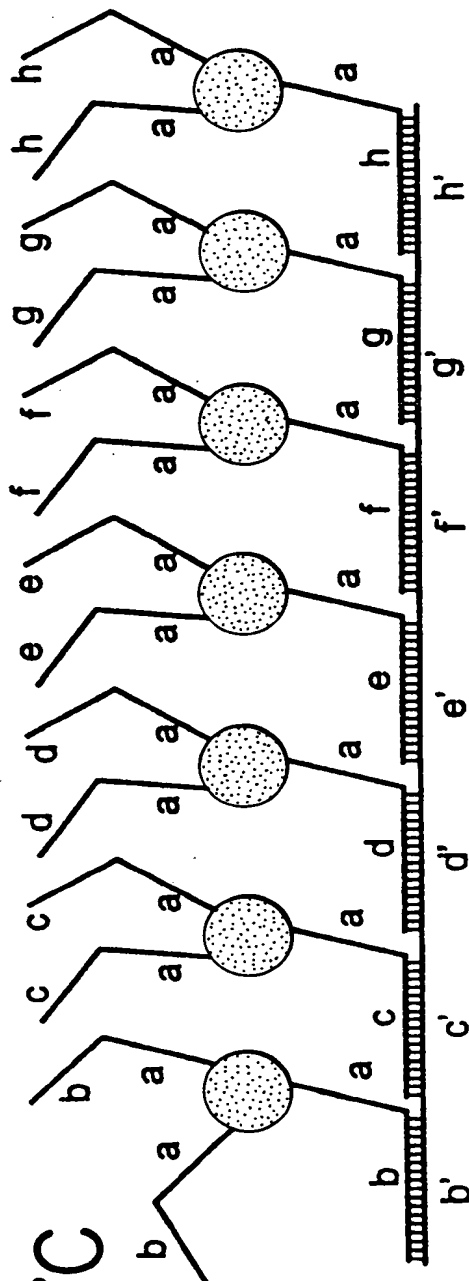


FIG. 17D

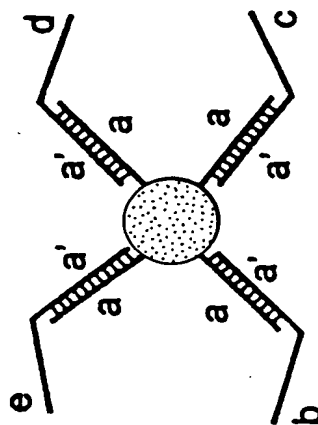
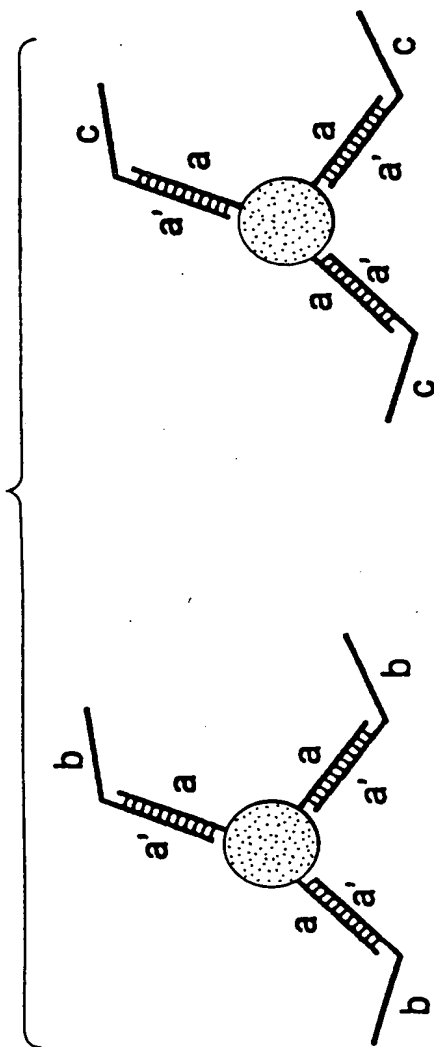


FIG. 17E

FIG. 18

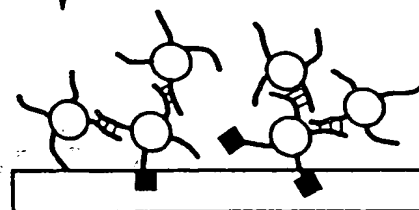
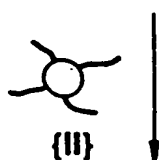
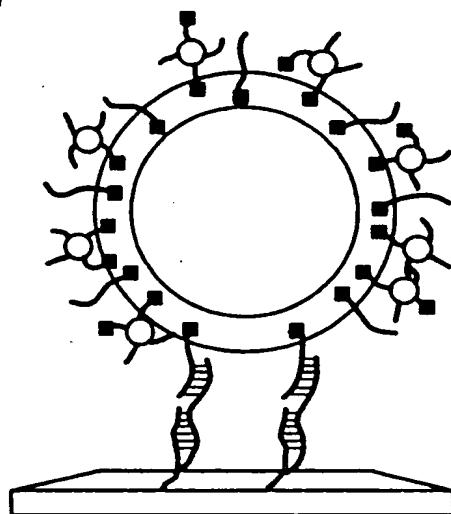
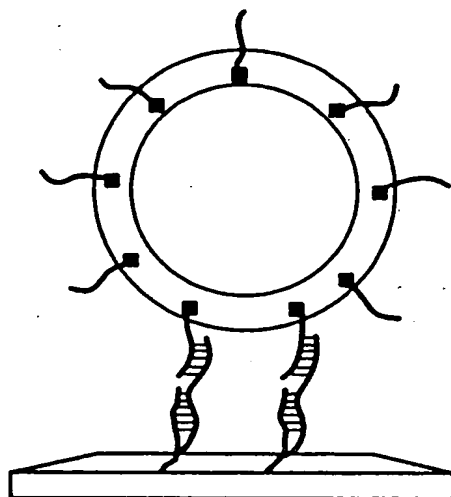


FIG. 19A

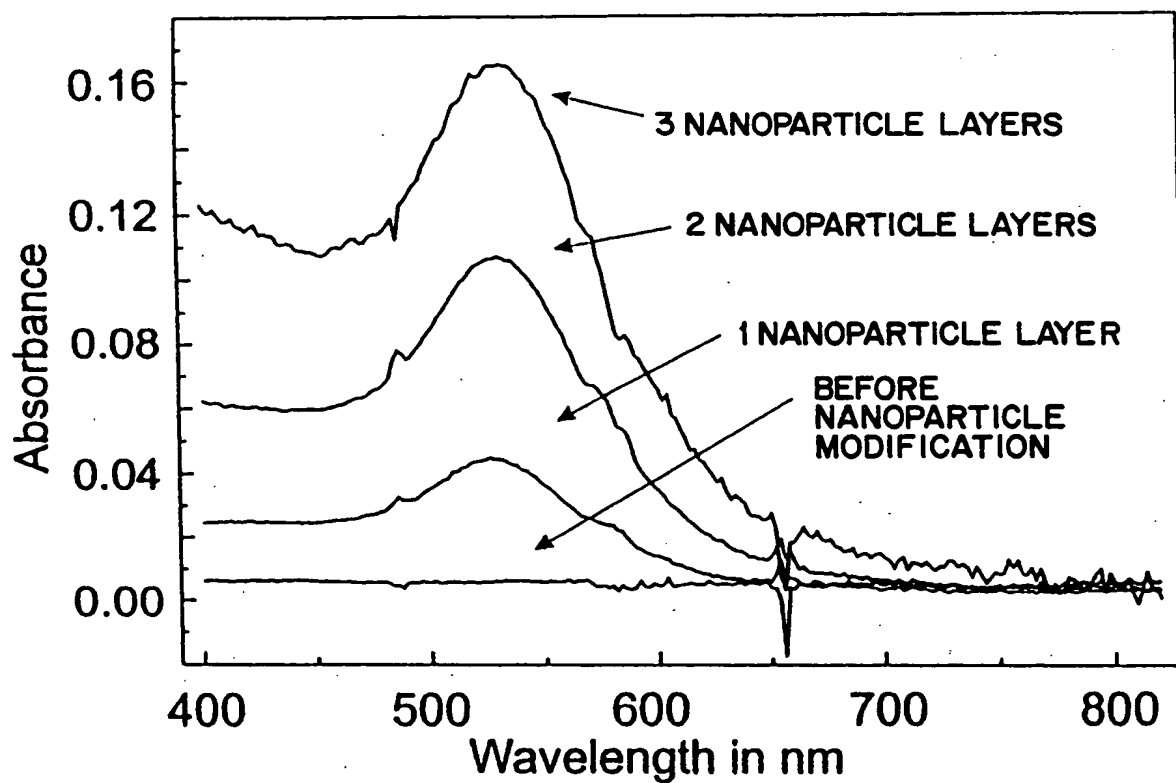


FIG. 19B

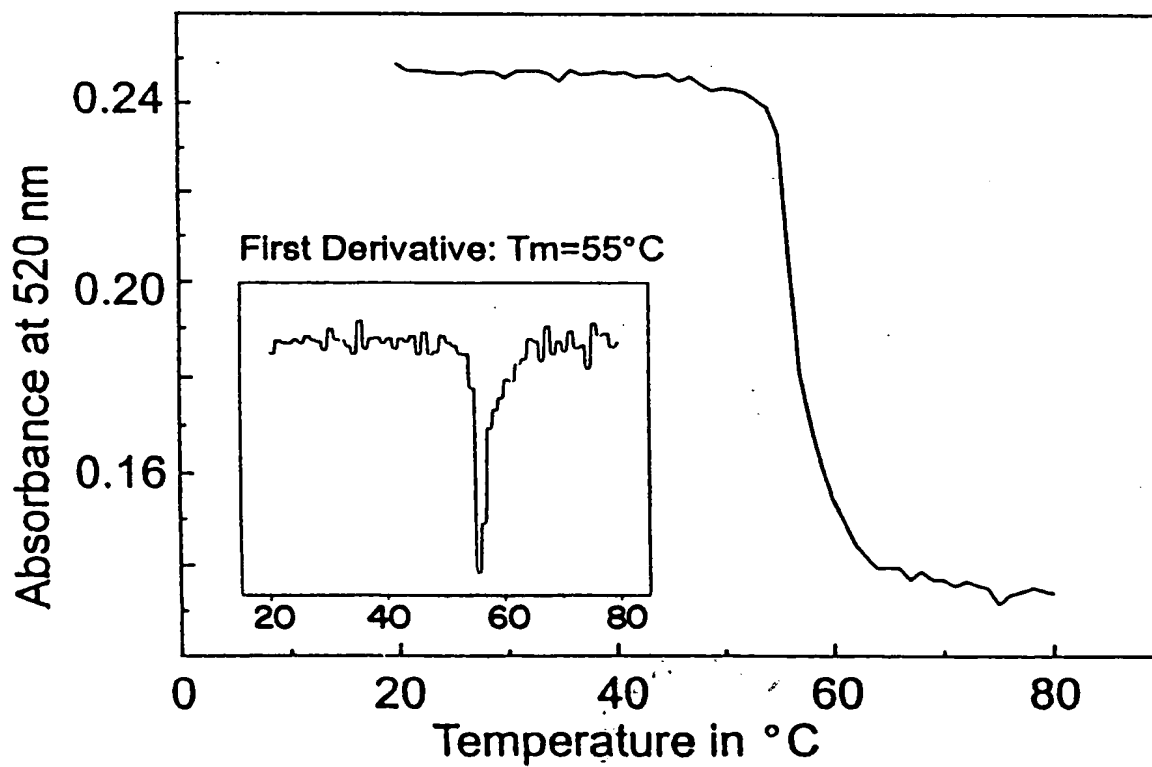


FIG. 20A

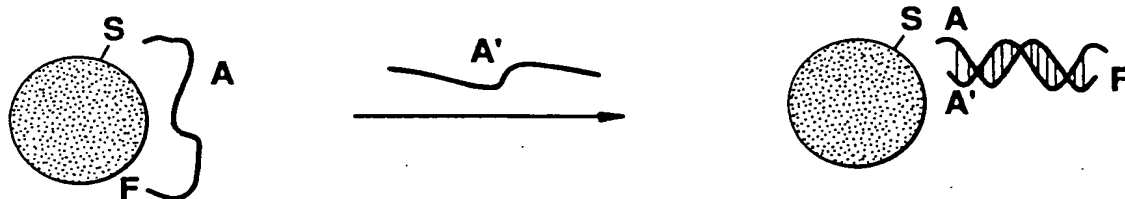


FIG. 20B

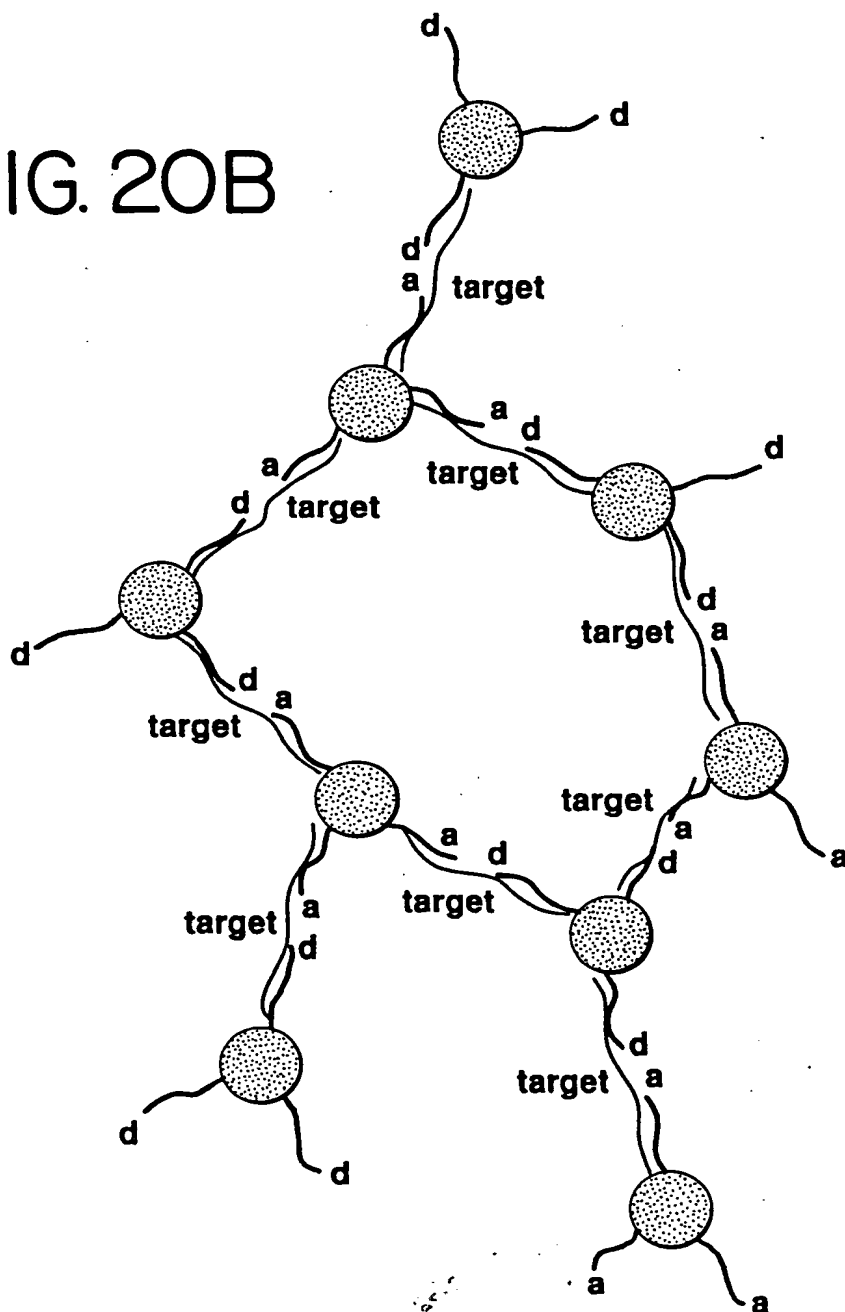


FIG. 21

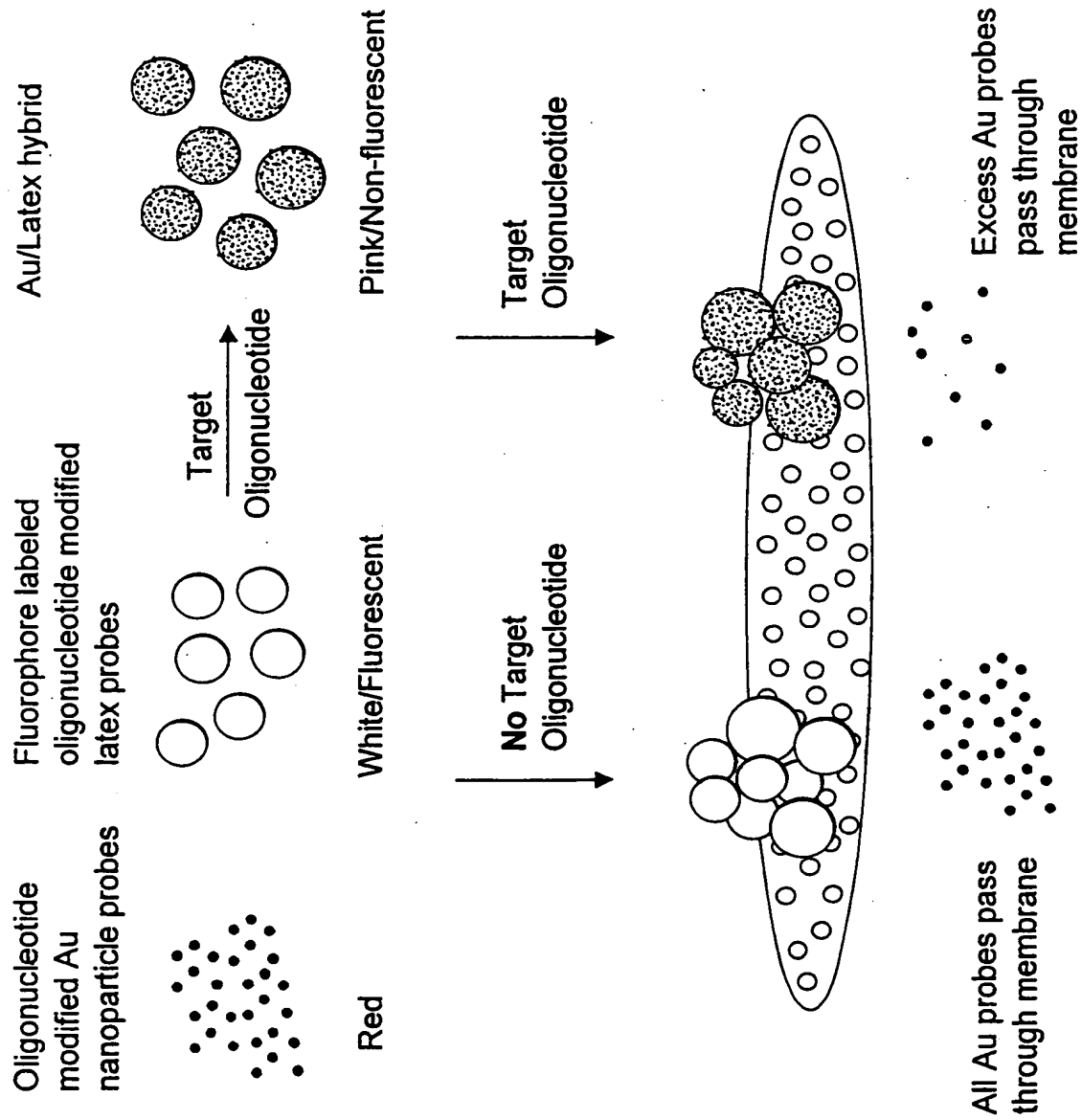
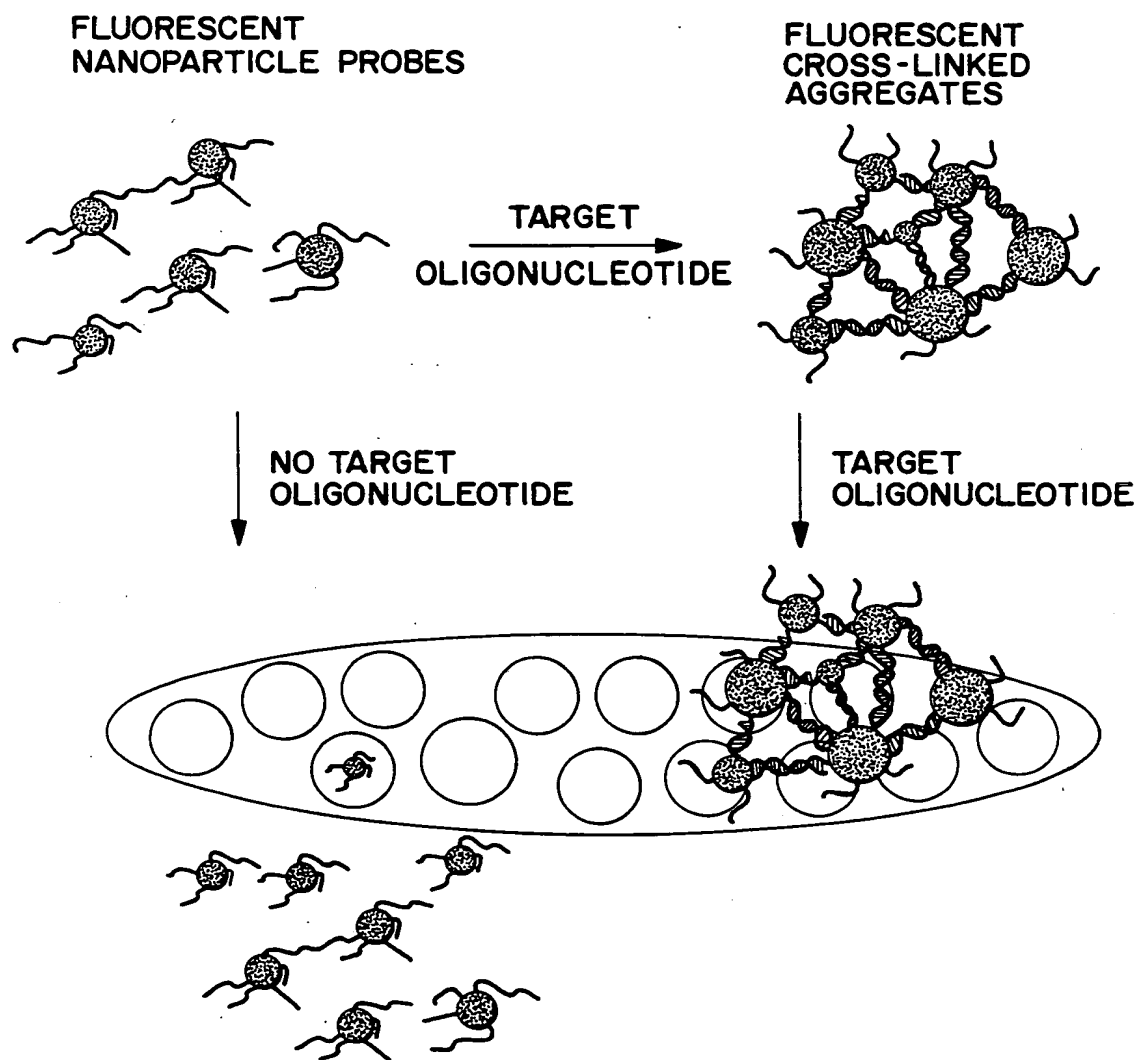


FIG. 22



THE FLUORESCENT NANOPARTICLE
PROBES PASS THROUGH THE
MEMBRANE

THE FLUORESCENT
CROSS-LINKED AGGREGATES
ARE RETAINED BY THE
MEMBRANE

FIG. 23

Anthrax PCR Product

5'G GCG GAT GAG TCA GTA GTT AAG GAG GCT CAT AGA GAA GTA ATT AAT
3'C CGC CTA CTC AGT CAT CAA TTC CTC CGA GTA TCT CTT CAT TAA TTA

TCG TCA ACA GAG GGA TTA TTG TTA AAT ATT GAT AAG GAT ATA AGA AAA
AGC AGT TGT CTC CCT AAT AAC AAT TTA TAA CTA TTC CTA TAT TCT TTT

ATA TTA TCC AGG GTT ATA TTG TAG AAA TTG AAG ATA CTG AAG GGC TT 3'
TAT AAT AGG TCC CAA TAT AAC ATC TTT AAC TTC TAT GAC TTC CCG AA 5'

141 mer Anthrax PCR product [SEQ ID NO:36]

3' CTC CCT AAT AAC AAT — 

[SEQ ID NO:37]

3' TTA TAA CTA TTC CTA — 

[SEQ ID NO:38]

Oligonucleotide-Nanoparticle Probes

Blocker Oligonucleotides

3' C CGC CTA CTC AGT CAT CAA TTC CTC CGA GT
3' A TCT CTT CAT TAA TTA AGC AGT TGT
3' TAT TCT TTT TAT AAT AGG TCC CAA TAT
3' AAC ATC TTT AAC TTC TAT GAC TTC CCG AA

[SEQ ID NO:39]

[SEQ ID NO:40]

[SEQ ID NO:41]

[SEQ ID NO:42]

FIG. 24

